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STRAUB & POKOTYLO 620 TINTON AVENUE BLDG. B, 2ND FLOOR TINTON FALLS, NJ 07724			RIVERO, ALEJANDRO	
			ART UNIT	PAPER NUMBER
			2618	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,767	Applicant(s) LAROIA ET AL.	
	Examiner Alejandro Rivero	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 16-19, 26-34 and 36-45 is/are rejected.
- 7) ☒ Claim(s) 12, 14, 15, 20-25 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of proper language and format for an abstract of the disclosure. The abstract should be in narrative and limited to a single paragraph within the range of 50 to 150 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear, concise and not repeat information from the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it contains the phrase "are described" (in line 1), which can be implied. Correction is required. See MPEP § 608.01(b).

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: METHOD OF REPORTING CHANNEL QUALITY USING PILOT TONES IN A MULTI-SECTOR CELL, INCLUDING NULL PILOT TONES, FOR GENERATING CHANNEL QUALITY INDICATORS.

3. The disclosure is objected to because of the following informalities:

In line 21 of page 11, replace "provide" with "provided".

In line 28 of page 13, replace "provide" with "provided".

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In line 8 of page 14, replace "Memory 1320" with "Memory 1308".

In line 1 of page 15, replace "out at" with "out".

In line 5 of page 17, replace "traffic 102" with "traffic 104".

In line 7 of page 18, replace "axis 317" with "axis 301".

In line 9 of page 26, replace "pilot tone 728" with "pilot tone 727".

In line 19 of page 30, replace "S1 929" with "S1 925".

In line 19 of page 33, replace "second S2" with "second S1".

In line 9 of page 36, replace "determine" with "determined".

Lines 22-24 of page 38 need revision.

In line 30 of page 40, replace "1700" with "1750".

In line 32 of page 42, replace "1816" with "1826".

In line 33 of page 43, replace "is transmits" with "transmits".

Lines 21-25 of page 44 need revision.

In line 19 of page 45, replace "such a" with "such as".

Appropriate correction is required.

Drawings

4. The drawings are objected to because of the following minor informalities:

In figure 2, element 211 is not mentioned in the specification.

In figure 3, element 301 is not mentioned in the specification.

In cell 921 of figure 9, replace the label "907" with "927".

In cell 941 of figure 9, replace the label "917" with "947".

In figure 16, element 1600 is not mentioned in the specification.

In figure 17, elements 1704, 1706, 1708 and 1710 are not mentioned in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 24 is objected to because of the following informalities:

In line 2 of claim 24, the examiner respectfully suggests replacing "from to be" with "to be".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear from reading the claims where the first and second quality indicators will be transmitted. For the purpose of this examination the term "transmitting" will be treated as meaning "passing on".
8. Claims 13 and 14 recite the limitation "said steps" in line 2, respectively. There is insufficient antecedent basis for this limitation in the claims. The examiner respectfully suggests replacing "said steps" with "the steps".
9. Claim 36 recites the limitation "modules" in line 36. There is insufficient antecedent basis for this limitation in the claim since only a single module has been mentioned previous to this claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-10, 18-19, 26-27 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Baum et al. (US 5,867,478).

Consider claim 1 and the above 35 U.S.C. 112 (2nd paragraph) rejection, Baum et al. a channel quality reporting method for use by a wireless terminal, the method comprising: measuring at least one of an amplitude and a phase of a first pilot signal corresponding to a first pilot tone to produce a first measured signal value (Column 9 lines 7-36, column 12 lines 44-56); generating a first channel quality indicator value from said first measured signal value according to a first function which uses at least said first measured signal value as an input (Column 14 lines 24-40, column 16 lines 23-64); transmitting the first channel quality indicator value (Column 16 lines 54-64, where Baum et al. disclose passing quality information to a soft decision decoder, hence transmitting); measuring at least one of an amplitude and a phase of a second pilot signal corresponding to a second pilot tone to produce a second measured signal value (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56, where Baum et al. disclose at least four pilot codes), the second pilot signal having a different transmission power than said first pilot signal (Column 9 lines 37-56, where Baum et al. disclose a null baud); generating a second channel quality indicator value from said second measured signal value according to a second function which uses at least said second measured signal value as an input (Column 14 lines 24-40, column 16 lines 23-64); and transmitting the second channel quality indicator value (Column 16

lines 54-64, where Baum et al. disclose passing quality information to a soft decision decoder, hence transmitting).

Consider claims 8-10, Baum et al. disclose all the limitations as applied to claim 1 above and also disclose wherein said first and second tones correspond to the same/different frequency and are received during overlapping/non-overlapping time periods (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56, where Baum et al. disclose different scenarios of a frequency reuse scheme using four pilot codes and four baud intervals).

Consider claims 2, 18, and 19, Baum et al. disclose all the limitations as applied to claim 1 above and also disclose wherein said wireless terminal is located in a first sector of a sectorized cell in which each sector uses the same set of tones (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56, where Baum et al. disclose a frequency reuse scheme, reads on claim 18), performing said first pilot signal measurement during a time period (baud) during which a sector located adjacent said first sector transmits another pilot signal on the same tone (code) as the first pilot (Column 9 lines 7-36, column 12 lines 44-56) but using a different pre-selected transmission power (zero) from the pre-selected transmission power used to transmit the first pilot signal (Column 9 lines 37-56, where Baum et al. disclose a null baud, reads on claims 2, 18 and 19).

Consider claim 26, Baum et al. disclose all the limitations as applied to claim 18 above and also disclose wherein the first channel quality indicator value is a function of a ratio of channel gain of an interfering sector and the sector in which the wireless

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terminal is located (Column 17 lines 46-57, where Baum et al. disclose co-channel interference).

Consider claim 27, Baum et al. disclose all the limitations as applied to claim 18 above and also disclose wherein the second signal measurement is made during a time period where each of the sectors transmits a NULL on said second tone (Column 9 lines 44-51) and wherein said second channel quality indicator value is a measurement of the noise on said second tone during the transmission of said NULL by each of the sectors of the cell on said second tone (Column 6 lines 39-65, column 9 line 37-column 10 line 57, column 14 lines 24-40, where Baum et al. disclose utilizing a frequency reuse scheme).

Consider claim 30 and the above 35 U.S.C. 112 (2nd paragraph) rejection, Baum et al. disclose a wireless terminal including a receiver for receiving pilot signals (Column 24 line 64-column 25 line 18); measuring means for measuring at least one of an amplitude and a phase of a first pilot signal to produce a first measured signal value (Column 9 lines 7-36, column 12 lines 44-56) and at least one of an amplitude and a phase of a second pilot signal to produce a second measured signal value (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56, where Baum et al. disclose at least four pilot codes); channel quality indicator value generation means for generating a first channel quality indicator value from said first measured signal value according to a first function which uses at least said first measured signal value as an input (Column 14 lines 24-40, column 16 lines 23-64) and generates a second channel quality indicator value from said second measured signal value

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according to a second function which uses at least said second measured signal value as an input (Column 14 lines 24-40, column 16 lines 23-64); and a transmitter for transmitting the first and second channel quality indicator values (Column 16 lines 54-64, where Baum et al. disclose passing quality information to a soft decision decoder, hence transmitting).

Consider claims 3-7 and 31-33, Baum et al. disclose all the limitations as applied to claim 1 above and also disclose estimating the received power and signal to noise power in the first and second received pilot signals (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56, column 14 lines 24-40, column 17 lines 46-56, where Baum et al. disclose at least four pilot codes and estimating C/N ratio at the receiver from the pilot codes received).

12. Claims 39-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Proctor, Jr (US 2003/0027587 A1, hereinafter Proctor).

Consider claim 39, Proctor discloses a base station (Abstract, paragraph [0005]) comprising a receiver for receiving at least two channel quality indicator values from a wireless (access) terminal (Paragraphs [0008]-[0011], where Proctor discloses at least two quality indicators, i.e. C/I and SNR); and means for determining from at least two different channel quality indicator values a transmission power required (target power level) to achieve a desired signal to noise ratio at said wireless terminal (Paragraph [0011]).

Consider claim 40, Proctor discloses all the limitations as applied to claim 39 above and also discloses wherein said at least two different channel quality indicator

values correspond to different power signal measurements (Paragraphs [0008] and [0011]) made by said wireless terminal at the same time, said determined transmission power being a function of said at least two channel quality indicator values (Paragraph [0011]).

Consider claim 41, Proctor discloses all the limitations as applied to claim 40 above and also disclose means for transmitting a signal to said wireless terminal using a transmission power determined from said at least two channel quality indicator values (Paragraphs [0008], [0026] and [0027]).

Consider claims 42 and 43, Proctor discloses all the limitations as applied to claim 41 above and also disclose means for extracting said at least two different channel quality values from a single or two separate messages received from said wireless terminal (Paragraphs [0011] and [0025], where Proctor discloses a processor).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
15. Claims 11, 13, 16-17, 28-29, 34 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baum et al. in view of Chang (US 6,728,551 B2).

Consider claims 11, 28 and 34, Baum et al. disclose all the limitations as applied to claims 1, 18 and 31 above and also disclose transmitting the quality indicator (Column 16 lines 54-64, where Baum et al. disclose passing quality information to a soft decision decoder, hence transmitting).

However, Baum et al. do not disclose a message generator incorporating the quality indicator in a message to be transmitted wirelessly (as in claims 11 and 34) or to transmitted to a base station (as in claim 28), where the base station calculates from at least two quality indicators an the amount of transmission power required for a desired signal to noise ratio (as in claim 28).

Chang discloses a message generator incorporating the quality indicator in a message transmitted wirelessly to a base station (Column 11 line 62-column 12 line 33, where Chang discloses a MS sending a message containing quality information to a base station, reads on claims 11, 28 and 34) and also where the base station calculates from at least two quality indicators an the amount of transmission power required for a desired signal to noise ratio (Column 12 lines 5-13, where Chang discloses setting power in the reverse link, reads on claim 28).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to wirelessly send a message to a base station containing quality information to calculate transmission power required for a desired SNR, as taught by

Chang, in the method of Baum et al. for the purpose of effectively supporting power control in both the forward and reverse link (as suggested by Chang in column 7 lines 3-34).

Consider claim 13 and the above 35 U.S.C. 112 (2nd paragraph) rejection, Baum et al. as modified by Chang disclose all the limitations as applied to claim 11 above and also disclose repeatedly performing (Column 3 line 54-column 4 line 12 of Baum et al., where Baum et al. disclose baud intervals and it is inherent that the power control process is repeated because pilot tones are received periodically) said steps of measuring a first pilot signal to produce a first measured signal value (Column 9 lines 7-36, column 12 lines 44-56 of Baum et al.); generating a first channel quality indicator value (Column 14 lines 24-40, column 16 lines 23-64 of Baum et al.); measuring a second pilot signal (Column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56 of Baum et al., where Baum et al. disclose at least four pilot codes); generating a second channel quality indicator value (Column 14 lines 24-40, column 16 lines 23-64 of Baum et al.); incorporating said first channel quality indicator value into a first message transmitted over a wireless communications link (Column 11 line 62-column 12 line 33 of Chang, where Chang discloses a MS sending a message containing quality information to a base station) and incorporating said second channel quality indicator value into a different second message transmitted over said wireless communications link (Column 11 line 62-column 12 line 33 of Chang, where Chang discloses a MS sending a message containing quality information to a base station and

column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56 of Baum et al., where Baum et al. disclose at least four pilot codes).

Consider claims 16 and 17, Baum et al. as modified by Chang disclose all the limitations as applied to claim 13 above and also disclose wherein said first and second messages are transmitted using communications channel segments dedicated to carrying channel quality indicator values (Column 7 lines 25-29 of Chang, where Chang discloses using a dedicated control channel), said messages carrying no explicit message types to indicate said messages are to report channel quality values (Column 11 line 62-column 12 line 13) and wherein said messages are transmitted during pre-selected dedicated time slots dedicated for use by said wireless terminal values (Column 7 lines 25-29 of Chang, where Chang discloses using a dedicated control channel), said dedication of said dedicated time slots precluding other wireless terminals using said dedicated time slots values (Column 7 lines 25-29 of Chang, where Chang discloses using a dedicated control channel).

Consider claim 29, Baum et al. as modified by Chang disclose all the limitations as applied to claim 28 above and also disclose periodically repeating said step of operating the base station to calculate said amount of transmission power (Column 12 lines 5-13 of Chang, where Chang discloses setting power in the reverse link) using a different set of first and second channel quality indicator values received from said wireless terminal (Column 11 line 62-column 12 line 33, where Chang discloses a MS sending a message containing quality information to a base station), each different set of first and second channel quality indicator values corresponding to a different symbol

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time during which said first and second pilot signal measurements were made (Column 11 line 62-column 12 line 33, where Chang discloses a MS sending a message containing quality information to a base station).

Consider claim 36 and the above 35 U.S.C. 112 (2nd paragraph) rejection, Baum et al. as modified by Chang disclose all the limitations as applied to claim 34 above and also disclose wherein said message generation module includes machine executable instructions for controlling a machine to generate a second message including said second channel quality indicator value (Column 11 line 62-column 12 line 33 of Chang, where Chang discloses a MS sending a message containing quality information to a base station and column 5 lines 56-63, column 6 lines 39-65, column 9 lines 7-36, column 12 lines 44-56 of Baum et al., where Baum et al. disclose at least four pilot codes).

Consider claim 37, Baum et al. as modified by Chang disclose all the limitations as applied to claim 34 and also disclose means for determining the position of the wireless terminal relative to a sector boundary from received signals (Column 6 lines 39-65 of Baum et al., where Baum et al. disclose determining distance based on received signal attenuation).

Consider claim 38, Baum et al. as modified by Chang disclose all the limitations as applied to claim 37 and also disclose wherein said message generation module includes position information in said first message (Column 11 line 62-column 12 line 33, where Chang discloses a MS sending a message containing quality information to a

base station and inherently contains position information since the quality is affected by the position of the mobile, i.e. attenuation).

16. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor in view of Li et al. (US 2002/0147017 A1).

Consider claims 44 and 45, Proctor discloses all the limitations as applied to claim 40 above and also disclose means for receiving channel quality indicator information (Paragraphs [0008] and [0011]).

However, Proctor does not disclose indicating the position of the wireless terminal relative to a second boundary included in a multi-sector cell (as in claim 44) or a multi-sector transmit antenna for transmitting pilot signals into sectors of a cell at the same time; and a transmitter coupled to said multi-sector antenna for transmitting pilot signals into each sector in a synchronized manner such that transmission of the pilot tones into all sectors of the cell use the same set of tones and are transmitted at substantially the same time in each of the sectors, said wireless terminal being located in one of said multiple sectors (as in claim 45).

Li et al. disclose indicating the position of the wireless terminal relative to a second boundary included in a multi-sector cell (Paragraph [0121]) and a multi-sector transmit antenna for transmitting pilot signals into sectors of a cell at the same time (Paragraphs [0018]-[0025], figure 8); and a transmitter coupled to said multi-sector antenna for transmitting pilot signals into each sector in a synchronized manner such that transmission of the pilot tones into all sectors of the cell use the same set of tones and are transmitted at substantially the same time in each of the sectors (Paragraph

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[0058]), said wireless terminal being located in one of said multiple sectors (Paragraph [0121]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to indicate the position of the wireless terminal relative to a second boundary included in a multi-sector cell and use a multi-sector transmit antenna for transmitting pilot signals into sectors of a cell at the same time; and a transmitter coupled to said multi-sector antenna for transmitting pilot signals into each sector in a synchronized manner such that transmission of the pilot tones into all sectors of the cell use the same set of tones and are transmitted at substantially the same time in each of the sectors, said wireless terminal being located in one of said multiple sectors, as taught by Li et al., in the method of Proctor for the purpose of assigning diversity clusters to subscribers that are close to cell boundaries in order to reduce interference (as suggested by Li et al. in paragraphs [0005], [0006] and [0113]).

Allowable Subject Matter

Claims 12, 14-15, 20-25 and 35 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Olszewski (US 2003/0223354 A1) discloses SNR measurements in an OFDM system.

Chang (US 2001/0046878 A1) discloses supporting power control on a supplemental channel in the base station.

Sudo et al. (US 2004/0233838 A1) disclose OFDM communication method and device.

Burt et al. (US 6,308,080 B1) disclose a power control method in point-to-multipoint systems.

Alamouti et al. (US 5,933,421) disclose a method for frequency division duplex communications.

Schiff et al. (US 6,549,780 B2) disclose a method for adjacent service area handoff in communication systems.

Bingham et al. (US 6,035,000) disclose mitigating radio frequency interference in multi-carrier transmission systems.

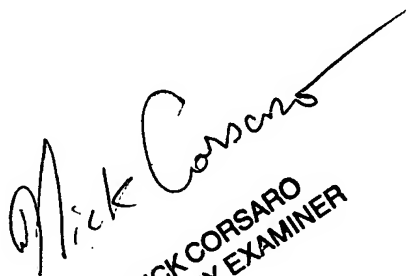
Uchida et al. (US 2004/0180658 A1) disclose a multiple cell multiple access wireless communication system.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alejandro Rivero whose telephone number is (571) 272-2839. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A stylized handwritten signature, possibly reading "AIR", enclosed within a large, loopy circular stroke.

NICK CORSARO
PRIMARY EXAMINER